



United States Department of the Interior

Fish and Wildlife Service

Arizona Ecological Services Field Office

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In Reply Refer To:

AESO/SE

2-21-92-I-478

May 23, 1997

Mr. John M. McGee, Forest Supervisor
United States Department of Agriculture
Forest Service
Coronado National Forest
300 West Congress
Tucson, Arizona 85701

Dear Mr. McGee:

Please find enclosed the Service's final biological opinion for the Mt. Lemmon Reconstruction Project, including the emergency actions conducted in 1996 and 1997. Thank you for your letter, dated May 22, 1997, affirming that the Forest Service will work towards implementing the conservation recommendations.

Based on a telephone call between Ren Lohofener of this office and Ms. Deborah Bieber, District Wildlife Biologist, of your office, we understand the project has, with the exception of minor clean up work, been concluded. If that is not the case, and should any further significant work be required, please inform me as soon as possible.

Please consider the final biological opinion as concluding formal consultation on this project. Thank you for the efforts the Forest Service has taken to minimize the impacts of this project on listed species. We particularly appreciate the Forest Service planting pine and oak trees in the areas where trees were removed.

Sincerely,

Sam F. Spiller
Field Supervisor

BIOLOGICAL OPINION SUMMARY
Mt. Lemmon Highway Reconstruction - Emergency Consultation

Date of opinion: May 23, 1997

Action agency: U.S. Forest Service, Coronado National Forest, Santa Catalina Ranger District, Tucson, AZ

Project: Mt. Lemmon Highway Reconstruction Project

Location: Pima County, Arizona.

Listed species affected: Mexican spotted owl (*Strix occidentalis lucida*) (threatened). Critical habitat for the Mexican spotted owl has been designated but has been enjoined by New Mexico District Court (Coalition of Arizona-New Mexico Counties for Stable Economic Growth versus USFWS, No. 95-1285-M Civil (D.N.M., filed March 4, 1997); no conferences or consultation is required.

Biological opinion: The Service concludes that the emergency actions and the highway reconstruction may adversely affect Mexican spotted owls. The Service concludes the emergency actions and highway reconstruction have insignificant adverse effects on the endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*). The Service concludes, given the protective measures the Forest Service has implemented, that the emergency actions and highway reconstruction are not likely to adversely affect the endangered American peregrine falcon (*Falco peregrinus*).

Incidental take statement:

Level of take anticipated: None, no Incidental Take Statement is needed.

Reasonable and prudent measures: None, no measures needed to minimize take.

Conservation recommendations: Implementation of these conservation recommendations are discretionary. To the extent that Forest Service authority allows:

1. Continue monitoring the falcon eyries in Bear Canyon, keeping records of nest locations and reproductive success.
2. In keeping with the original design of the project, the Forest Service should plant an additional 65 agave plants obtained from nursery stock so as to achieve a no net loss of agave as a result of the emergency reconstruction actions.
3. Minimize the future removal of agave plants within the Bear Canyon area.

4. Because of the importance of agave to the survival of the lesser long-nosed bat and in recognition of the fact that other future projects may propose transplanting/planting agave to minimize or avoid such adverse impacts to the species, the Service needs the best information available on agave transplanting methods and results. Therefore, the Service requests the Forest Service's help and information on the success of their transplanting efforts associated with this project, including the protocol used to transplant the salvaged agave, the success of the transplanting one year (June 1998) and two years (June 1999) after the transplanting occurred, and any differences in the survival success of salvaged versus nursery plant stock, could greatly assist future agave transplant efforts.
5. Minimize or prevent camping in possible Mexican spotted owl nesting habitat in Bear Canyon.
6. Request or direct that Pima County cease disposing of fill in Bear Canyon.
7. Continue to monitor the Bear Canyon Protected Activity Center (PAC), using approved protocols, for Mexican spotted owls to monitor occupancy status.
8. Minimize the removal of trees within the canyon, particularly trees greater than nine inches in diameter at breast height.



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May 23, 1997

Mr. John M. McGee, Forest Supervisor
United States Department of Agriculture
U. S. Forest Service
Coronado National Forest
300 West Congress
Tucson, Arizona 85701

Dear Mr. McGee:

The U.S. Fish and Wildlife Service (Service) has reviewed the information provided by the Coronado National Forest and the Santa Catalina Ranger District regarding the Mt. Lemmon Reconstruction Project. The Service appreciates the efforts the Forest Service has taken to minimize adverse effects on listed species.

While consultation on the proposed project was originally initiated in March 1992, the consultation history shows that on September 11, 1995, the Forest Service requested the initiation of formal consultation and provided the Service with a biological assessment for the project. Subsequently, on March 18, 1996, the Forest Service amended the project description and biological assessment. On March 29, 1996, the Forest Service requested emergency consultation on the entire amended project because the road was in imminent danger of failure and was a threat to human life and property. On March 29, 1996, Sam Spiller, Field Supervisor of the Arizona Ecological Services Field Office responded by letter back to you indicating that the Service would invoke the emergency consultation procedures under 50 CFR §402.05 for the entire amended project.

In the biological assessment dated September 11, 1995, the Forest Service made "no effect" findings for the lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), American peregrine falcon (*Falco peregrinus anatum*), and Mexican spotted owl (*Strix occidentalis lucida*). The same assessment made a determination of "may affect [Mexican spotted owl] critical habitat, but is not likely to result in the destruction or adverse modification of critical habitat." Critical habitat for the Mexican spotted owl has been designated, but has been enjoined by New Mexico District Court (Coalition of Arizona-New Mexico Counties for Stable Economic Growth versus USFWS, No. 95-1285-M Civil (D.N.M., filed March 4, 1997); consequently, no conferences or consultation are required.

The Service believes the emergency construction measures could effect the American peregrine falcon, lesser long-nosed bat, and Mexican spotted owl for the reasons outlined in the following discussions.

American Peregrine Falcon

The Service has reviewed the information provided by the Forest Service in its original September 11, 1995, as well as its March 18, 1996, amended biological assessment regarding its "no effect" determination relative to the American peregrine falcon along with the best available scientific and commercial information on the species. The Service recommended in its March 29, 1996, letter that the Forest Service minimize, to the extent possible, construction noise within one mile of the peregrine falcon nest. The Forest Service biological assessment shows that a falcon eyrie at Windy Point produced young in 1994 and falcons were found in 1995 at Panorama Wall approximately 0.50 miles away. The Windy Point eyrie and the potential Panorama Wall eyrie are 1500 feet and 600 feet horizontal distance from the road construction, respectively. Informal consultation between the agencies in August 1995 resulted in the Forest Service agreeing to limit construction activities within the "core" area or 0.50 miles from active eyries during the breeding season, March 15 through June 30. No limitations were placed on construction activities if the birds are not nesting within 0.50 miles of the project site.

In the May 15, 1997, letter from the Forest Service requesting initiation of formal consultation, information was provided additional information concerning peregrine falcons use of the area and timing and nature of the actual emergency reconstruction actions undertaken. Forest Service information indicates that the peregrine falcon pair that attempted to nest at the Panorama Wall in 1995 failed for unknown reasons prior to the initiation of the reconstruction project. The reconstruction activity was started on April 1, 1996 at the end of the highway farthest from the eyrie. The noisiest construction involving some blasting, but mostly slide removal with heavy equipment occurred between October 1996 and March 1997, outside of the breeding season of the falcon. The road was paved the week of May 12, 1997, and all work at the end of the road closest to the eyrie has been completed.

The pair was not found at the Panorama Wall eyrie in 1996; however, peregrines were sighted in the project area but appeared to be passing to a distant and unknown eyrie. On May 9, 1997, a highway worker and ex-falconer informed the Forest Service of an active eyrie site near the project area. The Forest Service investigated and located a new eyrie near the former Panorama Wall site. At least one nestling was heard. The new eyrie is clearly visible from the highway and is within 1/4 of the road. The pair did not start nesting prior to construction but appears to have started nesting during the construction period.

Because of the proximity of the two eyries known from the vicinity prior to the initiation of reconstruction activity and the nature of the proposed reconstruction activities, the Service does not concur with the Forest Service's "no effect" determination; however, based on a thorough analysis of the project, the biology of the falcon, and the measures implemented by the Forest Service to minimize and avoid impacts to the species, and the fact that unknown to all a pair of peregrine falcons successfully nested and hatched at least one young within 1/4 mile of the project area, the Service believes that the actions undertaken during this emergency are not likely to adversely affect the peregrine falcon.

Within the authority of the Forest Service, the following actions could assist in the recovery of the American peregrine falcon.

1. Continue monitoring the falcon eyries with Bear Canyon, keeping records of nest locations and reproductive success.

Lesser Long-nosed Bat

The Service has reviewed the information provided by the Forest Service in its original September 11, 1995, biological assessment (BA) as well as its March 18, 1996, amended BA regarding its "no effect" determination relative to the lesser long-nose bat along with the best available scientific and commercial information on the species. The lesser long-nosed bat is migratory and found throughout its historic range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador. Roosts in Arizona are occupied from late April to September (Cockrum and Petryszyn 1991); the bat is not known to be present during winter in Arizona (Hoffmeister 1986). In spring, adult females, most of which are pregnant, arrive in Arizona gathering into maternity colonies. These roosts are typically at low elevations near concentrations of flowering columnar cacti. After the young are weaned these colonies disband, in July and August; some females and young move to higher elevations, primarily in the southeastern parts of Arizona near concentrations of blooming paniculate agaves.

Lesser long-nosed bats appear to be opportunistic foragers and efficient fliers. The lesser long-nosed bat is known to fly long distances from roost sites to foraging sites. Night flights from maternity colonies to flowering columnar cacti have been documented in Arizona at 15 miles, and in Mexico at 25 miles and 38 miles (Virginia Dalton, Tucson, Arizona, pers. comm. 1997; Yar Petryszyn, University of Arizona, Tucson, pers. comm. 1997). Lesser long-nosed bats have been recorded visiting individual blooming Palmer's agaves in excess of 1000 visits per night (Ronnie Sidner, Tucson, Arizona, pers. comm. 1997), while other agaves may not be visited at all (Liz Slauson, Desert Botanical Gardens, Phoenix, Arizona, pers. comm. 1997). Lesser long-nosed bats have been observed feeding at hummingbird feeders many miles from the closet potential roost site (Yar Petryszyn, pers. comm. 1997).

Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current endangered status of the species. Suitable day roosts and suitable concentrations of food plants are the two resources that are crucial for the lesser long-nosed bat (Fleming 1995).

While the Forest Service's biological assessment did not locate any bats by netting in the project area, it did document that there is a confirmed record of the lesser long-nosed bat in Sabino Canyon approximately eight miles away. Confirmed records also exist approximately 15 and 25 miles away. At this time, there are no confirmed records of roosting sites for the bat in or adjacent to the project area. The amended biological assessment indicates that 177 agave will be lost as a result of the proposed project; however, the project design calls for the replacement

of these plants through the direct transplantation of 90 individuals salvaged from the project area, with the balance replaced by transplanted nursery stock. Thus, no net loss of potential forage plants for the bat was anticipated.

In the May 15, 1997, letter from the Forest Service requesting initiation of formal consultation, information was provided regarding the actual emergency reconstruction actions undertaken. A total of 285 agave were impacted by the road repairs. A total of 200 individuals were salvaged and an additional 20 five gallon nursery stock were planted to offset the loss. In total, the emergency reconstruction resulted in a net loss of potential forage plants for the lesser long-nosed bat. It is unlikely, despite best efforts by the Forest Service, that the transplant of the 220 agave will be 100 percent successful. During a previous Mt. Lemmon highway reconstruction project (Phase 3), 1,072 agave were to be transplanted, and the Forest Service found that, due to contractor error, transplant success was very low.

Because of the proximity of the project area to at least one confirmed record of the bat well within the known foraging range of the species, the importance of agave as a food source for the lesser long-nosed bat, and the uncertainty of success of the transplanting of agave as a result of the project actions, the Service believes the loss of agave plants may effect the bat. However, based on a thorough analysis of the project, the biology of the lesser long-nosed bat, the availability of agave in the surrounding area, and the measures implemented by the Forest Service to minimize and avoid impacts to the species, the Service has determined that the actions undertaken during this emergency resulted in only insignificant effects. The Service, therefore, concludes that the actions undertaken during this emergency are not likely to adversely affect the lesser long-nosed bat.

Within the authority of the Forest Service, the following actions could assist in the recovery of the lesser long-nosed bat.

1. In keeping with the original design of the project, the Forest Service should plant an additional 65 agave plants obtained from nursery stock so as to achieve a no net loss of agave as a result of the emergency reconstruction actions.
2. Minimize the future removal of agave plants within the Bear Canyon area.
3. Because of the importance of agave to the survival of the lesser long-nosed bat and in recognition of the fact that other future projects may propose transplanting/planting agave to minimize or avoid such adverse impacts to the species, the Service needs the best information available on agave transplanting methods and results. Therefore, the Service requests the Forest Service's help and information on the success of their transplanting efforts associated with this project, including the protocol used to transplant the salvaged agave, the success of the transplanting one year (June 1998) and two years (June 1999) after the transplanting occurred, and any differences in the survival success of salvaged versus nursery plant stock, could greatly assist future agave transplant efforts.

Mexican Spotted Owl

The emergency reconstruction activities for the Mt. Lemmon highway project were within portions of the threatened Mexican spotted owl Bear Canyon Protected Activity Center (PAC) (#0505001). The September 11, 1995, biological assessment and the March 18, 1996, amended biological assessment both concluded that the proposed reconstruction activities would have "no effect" on the Mexican spotted owl unless owls were rediscovered in the canyon. While it is correct that Mexican spotted owls have not been found in Bear Canyon since 1990, the reason for their absence is not known. The Service believes that modification of approximately nine acres within the Bear Canyon PAC and an additional 12.44 acres will be impacted outside of the PAC "may affect" the survival and recovery of the Mexican spotted owl, and therefore, the emergency reconstruction of the highway has had an adverse effect on the species. The same assessment made a determination of "may affect [Mexican spotted owl] critical habitat, but is not likely to result in the destruction or adverse modification of critical habitat."

Critical habitat for the Mexican spotted owl has been designated but has been enjoined by New Mexico District Court (Coalition of Arizona-New Mexico Counties for Stable Economic Growth versus USFWS, No. 95-1285-M Civil (D.N.M., filed March 4, 1997); consequently, no conferences or consultations are required.

The following biological opinion addresses formal section 7 consultation for this species. A complete administrative record of this consultation is on file in the Arizona Ecological Services Field Office.

BIOLOGICAL OPINION

CONSULTATION HISTORY

The proposed Mt. Lemmon highway reconstruction has a long consultation history. Earliest records in the administrative record date back to March 1992, when informal conferencing was initiated with respect to the then proposed threatened Mexican spotted owl. On September 11, 1995, the Forest Service requested initiation of formal consultation and provided the Service with a biological assessment that addressed the lesser long-nosed bat, American peregrine falcon, and the Mexican spotted owl.

On March 18, 1996, the Forest Service provided the Service with an amendment to the Biological Assessment. Basically, the amendment reported that the highway reconstruction project had been shortened from 2.5 to 2.0 miles in length and less impact to Mexican spotted owl habitat was predicted.

On March 7, 1996, Federal Highway personnel reported that damage caused by the winter storms in 1993 had weakened the highway and subsequent repairs had failed to correct the problem. It was reported that additional rainfall could cause the road to fail. On March 29,

1996, the Forest Service requested initiation of an emergency consultation to cover the needed highway repairs for the entire 2.0 miles.

On March 29, 1996, the Service responded to the emergency request, agreed that the consultation should be handled under the emergency consultations provisions of the regulations, and outlined five actions that could be taken to minimize incidental take of the owl, falcon, and bat.

On May 7, 1997, Richard Hannan, of the Service, contacted the Forest Service's Bill Lewis and discussed the status of the emergency reconstruction activities on the Mt. Lemmon Highway project. Mr. Lewis indicated that the emergency reconstruction activities were nearly completed and that the Forest Service would be contacting the Service soon concerning the project.

On May 8, 1997, Service staff and Deborah Bieber, of the Forest Service, discussed the requirements needed for the Forest Service to initiate consultation on this emergency action. That telephone conversation was followed up with a letter to John M. McGee, Forest Supervisor of the Coronado National Forest.

On May 15, 1997, the Forest Service requested the initiation of formal consultation under the emergency provisions of 50 CFR 402.05 and provided the Service with a description of the nature of the emergency, justification for the expedited consultation, and an evaluation of the response to and impacts of the emergency actions on listed species and their habitats including those measure provided by the Service in an effort to avoid and minimize impacts the Mexican spotted owl, American peregrine falcon, and lesser long-nosed bat.

DESCRIPTION OF PROPOSED ACTION

This emergency reconstruction of Mt. Lemmon Highway in the Santa Catalina Mountains covered by this opinion resulted in widening and reconstructing about 2.0 miles of highway between Prison Camp Road (milepost 7.5) and a point about 0.5 road-miles south of the bridge at Bear Canyon (milepost 10.0). The project includes elevations between 4,800 and 5,600 feet ASL, traversing several vegetation communities: chaparral, oak-woodland, pine-oak, and cypress forest.

The project updated the road structure originally built between the 1930's and 1950's. Reconstruction required road widening, improving drainage, and paving up to a 60 foot wide corridor. The corridor included two 12-foot wide travel lanes, two 2-foot wide paved shoulders, two 4-foot wide foreslopes, and two 4-foot wide ditches. Before being amended and an emergency being declared, the project involved 2.5 miles of highway and was estimated to impact 42.84 acres. Subsequent amendments shortened the overall project length to 2.0 miles. Reconstruction required blasting, digging, tree removing, and operating construction equipment.

The emergency reconstruction activities were estimated to impact 9 acres of Mexican spotted owl habitat in the Bear Canyon PAC (#0505001). An additional 12.44 acres of possible owl habitat

was estimated to be impacted outside the PAC for a total of 21.44 acres. The project was expected to remove 59 pinyon pine, most of which were be greater than 9" diameter at breast height (DBH), 26 oaks (0-4" diameter at root crown (DRC), and 113 oaks (> 5" DRC).

STATUS OF THE MEXICAN SPOTTED OWL - Rangewide

The Mexican spotted owl was proposed for listing on November 4, 1995 (56 CFR 56344) and listed as threatened on March 16, 1993 (58 FR 14248). Critical habitat for the owl was designated on June 6, 1995 (60 FR 29914). The proposed project is within critical habitat; however, since critical habitat for the Mexican spotted owl (MSO) (*Strix occidentalis lucida*), has been enjoined by New Mexico District Court (Coalition of Arizona-New Mexico Counties for Stable Economic Growth versus FWS, No. 95-1285-M Civil (D.N.M., filed March 4, 1997), no consultation is required for critical habitat for this species.

The Mexican spotted owl was originally described from a specimen collected at Mount Tancitaro, Michoacan, Mexico, and named *Syrnium occidentale lucidum*. The spotted owl was later assigned to the genus *Strix*. Specific and subspecific names were changed to conform to taxonomic standards and became *S. o. lucida*. The American Ornithologists' Union currently recognizes three spotted owl subspecies, including the California (*S. o. occidentalis*), Mexican (*S. o. lucida*), and Northern (*S. o. caurina*) spotted owls. The Mexican spotted owl is mottled in appearance with irregular white and brown spots on its abdomen, back, and head. The spots of the Mexican spotted owl are larger and more numerous than in the other two subspecies giving it a lighter appearance. Unlike most owls, spotted owls have dark eyes. Several thin white bands mark an otherwise brown tail.

The Mexican spotted owl is distinguished from the California and northern subspecies chiefly by geographic distribution and plumage. The Mexican spotted owl has the largest geographic range of the three subspecies. Its range extends from the southern Rocky Mountains in Colorado and the Colorado Plateau in southern Utah southward through Arizona and New Mexico and discontinuously through the Sierra Madre Occidental and Oriental to the mountains at the southern end of the Mexican Plateau.

Using starch-gel electrophoresis to examine genetic variability among the three subspecies of spotted owls, Barrowclough and Gutierrez (1990) found the Mexican spotted owl to be distinguishable from the other two subspecies by a significant difference in allelic frequency at one locus. They concluded that this genetic variation, which suggests prolonged geographic isolation of the Mexican subspecies, indicates that the Mexican spotted owl may represent a species distinct from the California and northern spotted owls.

Although the range of the owl covers a broad area of the southwestern United States and Mexico, much remains unknown about the species' distribution within this range. This is especially true in Mexico where much of the owl's range has not been surveyed. Information gaps also appear for the species' distribution within the United States. It is apparent that the owl occupies a fragmented distribution throughout its United States range corresponding to the availability of forested mountains and canyons, and in some cases, rocky canyon lands.

The primary administrator of lands supporting owls in the United States is the Forest Service. According to the Mexican Spotted Owl Recovery Plan, 91 percent of owls known to exist in the United States between 1990 and 1993 occur on land administered by the Forest Service (U.S. Department of the Interior 1995). The majority of known owls have been found within Region 3 of the Forest Service, which includes 11 National Forests in New Mexico and Arizona. Forest Service Regions 2 and 4, including two National Forests in Colorado and three in Utah, support fewer owls.

The range of the Mexican spotted owl in the United States has been divided into six recovery units (RUs) as discussed in Part II.B. of the Mexican Spotted Owl Recovery Plan (Plan) (U.S. Department of the Interior 1995). An additional five RUs were designated in Mexico. While the Recovery Plan provides distribution, abundance, and density estimates by RU, there is currently no reliable estimate of the numbers of owls throughout its entire range due to the limited information currently available. Owl surveys conducted from 1990 through 1993 indicate that the species persists in most locations reported prior to 1989, with the exception of riparian habitats in the lowlands of Arizona and New Mexico, and all previously occupied areas in the southern States of Mexico. Increased survey efforts have resulted in additional sightings for all recovery units.

Fletcher (1990) calculated that 2,074 owls existed in Arizona and New Mexico in 1990 using information gathered by Region 3 of the Forest Service. Fletcher's calculations were modified by McDonald *et al.* (1991), who estimated that there were a total of 2,160 owls in the United States. However, these numbers are not reliable estimates of current population size for a variety of statistical reasons. While the number of owls throughout the range is currently not available, the Recovery Plan reports an estimate of owl sites based on 1990-1993 data. An owl "site" is defined as a visual sighting of at least one adult owl or a minimum of two auditory detections in the same vicinity in the same year. Surveys from 1990 through 1993 indicate one or more owls have been observed at a minimum of 758 sites in the United States and 19 sites in Mexico. The greatest concentration of known owl sites in the United States occurs in the Upper Gila Mountain (55.9 percent), followed by the Basin and Range-East (16.0 percent), Basin and Range-West (13.6 percent), Colorado Plateau (8.2 percent), Southern Rocky Mountain-New Mexico (4.5 percent), and Southern Rocky Mountain-Colorado (1.8 percent) RUs. Minimum total numbers in the United States range from 777 individuals assuming each known site was occupied by a single owl, to 1,554 individuals assuming each known site was occupied by a pair of owls.

Past, current, and future timber-harvest practices in the Region 3 of the Forest Service, in addition to catastrophic wildfire, were cited as the primary factors leading to listing of the spotted owl as a threatened species. Fletcher (1990) estimates that 420,000 hectares (1,037,000 acres) of habitat were converted from suitable to capable. Of this, about 78.7 percent, or 330,000 hectares (816,000 acres) was a result of human activities, whereas the remainder was converted naturally, primarily by wildfire. Other factors which have or may lead to the decline of this species include a lack of adequate regulatory mechanisms. In addition, the Recovery Plan notes that forest management has created ecotones favored by great horned owls, and there is

as a result an increased likelihood of contact between spotted owls and great horned owls. Increases in scientific research, birding, educational field trips, and agency trips are also likely to increase. Finally, there is a potential for increasing malicious and accidental anthropogenic harm, and the potential for the barred owl to expand its range, resulting in competition and/or hybridization with the spotted owl.

STATUS OF THE MEXICAN SPOTTED OWL - Recovery Unit

The proposed project occurs within the Basin and Range-West Recovery Unit. This RU is dominated by Madrean elements, and includes numerous mountain ranges such as the Chiricahua, Huachuca, Pinaleno, Bradshaw, Pinal, Santa Catalina, Santa Rita, Patagonia, Santa Teresa, Atascosa, Mule, Dragoon, Peloncillo, Mazatzal, and Rincon Mountains. Vegetation within the RU ranges from desert scrub to semi-desert grassland in the valleys, and upwards in elevation to montane forests. Montane vegetation includes interior chaparral, encinal woodlands, Madrean pine-oak woodlands at low and middle elevations, and ponderosa pine, mixed-conifer, and spruce-fir forests at higher elevations. Within the Basin and Range-West RU, the majority of the owls occur in the isolated mountain ranges in encinal oak woodlands, mixed-conifer and pine-oak forests, and rocky canyons.

Federal lands encompass 36% of this RU, and are mostly administered by the Bureau of Land Management and the Forest Service, with a small portion managed by the National Park Service. The dominant land use activity is recreation, and includes hiking, birdwatching, camping, off-road driving, skiing, and hunting. Livestock grazing also occurs in low and middle elevations.

ENVIRONMENTAL BASELINE

Under section 7(a)(2) of the Endangered Species Act (ESA), when considering the effects of the action on federally listed species, the Service is required to take into consideration the environmental baseline. Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects which have undergone section 7 consultation, and the impacts of State and private actions which are contemporaneous with the consultation in progress. On the Coronado National Forest, past and present Federal, State, private, and other human activities that affect this RU include past timber sales, fuelwood gathering activities, cattle grazing, development of recreation sites, and road construction and maintenance activities.

The Forest Service has formally consulted on approximately 166 timber sales and other projects in Arizona and New Mexico since August 1993. These projects have resulted in the anticipated incidental take of 46 owls. In addition, the Bureau of Indian Affairs has consulted on one timber sale on the Navajo Reservation which resulted in an anticipated take of four Mexican spotted owls, and a highway reconstruction which resulted in the anticipated incidental take of two Mexican spotted owls. The Federal Highway Administration has consulted on one highway project that resulted in an undetermined amount of incidental take.

EFFECTS OF THE ACTION

Mexican spotted owls were first recorded in Bear Canyon in 1949 (Duncan and Taiz 1991). J. L. Ganey observed a young owl in the canyon in 1985 (Ganey 1988). In 1987, R. Duncan observed two fledgling owls. Mature owls were found in 1988 and 1989. No eggs or young were found in either year. In 1990, owls were inventoried using USDA Region 3 protocol and one owl was "inferred" as being in the canyon. The same protocol was used in 1991, 1992, and 1993, but no owls were found. The site was "informally" monitored in 1994 (two visits) and 1995 (three visits), but no owls were found. In addition, Mr. Russell Duncan (Southwestern Field Biologists) and Steve Speich (Dames and Moore) intermittently made nighttime visits throughout the season in both 1994 and 1995 without finding any owls.

In 1996, six monitoring sessions were conducted using standardized Mexican spotted owl survey protocol. In 1997, as of the time of this opinion, two surveys, again using standardized survey protocol, had been conducted. No owls were found in the 1996 or 1997 surveys (Ms. D. Bieber, U.S. Forest Service, May 20, 1997, pers. comm.).

It has been hypothesized that increased camping within the nest grove (Duncan and Taiz 1991) may have resulted in disturbance. Another possibility is that the noise associated with Pima County road maintenance crews disposing of fill (rocks and soil) over the edge of Mt. Lemmon Highway and into Bear Canyon Creek disturbed the owls and they left the site.

The Bear Canyon PAC includes pine-oak, cypress, and riparian vegetation within the drainage and on the steep north-facing slope of Bear Canyon Creek. The PAC is isolated on most sides by chaparral and oak-woodland type communities. Although currently enjoined by the court, the PAC is within designated critical habitat for the Mexican spotted owl (FR 60:108, July 6, 1995).

In a May 15, 1997, letter, the Forest Service requested initiation of formal consultation, and provided information regarding the actual emergency reconstruction actions undertaken and the scope of the impact. As was estimated prior to the initiation of reconstruction activities, a total of 9 acres was impacted in the Bear Canyon PAC and an additional 12.44 acres outside of the PAC was impacted. A total of 22 pinyon pine and 32 oaks (0-4 DRC), 163 oaks (greater than 5 DRC), 3 cottonwood and 31 juniper were removed as a result of reconstruction activities.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of ESA.

In past biological opinions, it has been stated that, "Because of the predominant occurrence of the owls on Federal lands, and because of the role of the respective Federal agencies in

administering the habitat of the owl, actions to be implemented in the future by non-Federal entities on non-Federal lands are considered of minor impact." However, there has been a recent influx of harvest activities on non-Federal lands. Much of the non-Federal lands being harvested are adjacent to or within National Forests (i.e., private inholdings). These activities reduce the quality and quantity of owl nesting, roosting, and foraging habitat and could cause disturbance to breeding owls. All forests throughout the State could be impacted, which could result in adverse cumulative effects in the future.

CONCLUSION

After reviewing the current status of the Mexican spotted owl, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the emergency reconstruction of Mt. Lemmon Highway, as proposed in the biological assessment and amendment to the biological assessment, is not likely to jeopardize the continued existence of the Mexican spotted owl. Critical habitat for the Mexican spotted owl has been designated, but has been enjoined by New Mexico District Court (Coalition of Arizona-New Mexico Counties for Stable Economic Growth versus USFWS, No. 95-1285-M Civil (D.N.M., filed March 4, 1997); no consultation is required and critical habitat is not considered in this biological opinion.

INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

On March 29, 1996, the Service provided the Forest Service with the following measures for minimizing the take of the Mexican spotted owl and its habitat in Bear Canyon PAC (#0505001) and adjacent to the PAC under this emergency action:

Minimize removal of trees, particularly those larger than nine inches in diameter at breast height. The amended biological assessment dated March 18, 1996, estimated that it would be necessary to remove a total of 37 pinyon pine and 44 oaks.

Maintain a log of the tree and agave species and the numbers of individuals of those species that are affected by construction activities.

Report any observation of listed species within the proposed project area during construction to the Service.

While Forest Service information indicates that the emergency reconstruction actions did not modify any more acres than originally estimated, the number of trees lost during the project was 170 more than estimated in the March 18, 1996, amended biological assessment. However, the Forest Service attempted to implement those measures provided by the Service to minimize impacts to the Mexican spotted owl in its response to the emergency, and the requirements for exemption from the taking provisions of section 9 have been met.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The biological assessment identified two possible reasons why Mexican spotted owls may not be using Bear Canyon: (1) dispersed camping within the nesting area, and (2) noise and disturbance caused by Pima County road maintenance crews dumping fill into Bear Canyon. Within the authority of the Forest Service, the following conservation recommendations could assist in the recovery of the Mexican spotted owl.

1. Minimize or prevent camping in possible Mexican spotted owl nesting habitat in Bear Canyon.
2. Request or direct that Pima County cease disposing of fill in Bear Canyon.
3. Continue to monitor the Bear Canyon PAC, using approved protocols, for Mexican spotted owls to monitor occupancy status.
4. Minimize the removal of trees within the canyon, particularly trees greater than nine inches in diameter at breast height.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests the Forest Service's advising the Service of the implementation of any conservation recommendations and whether they prove to be effective in conservation of listed species and habitat.

Mr. John M. McGee

13

This concludes formal consultation on the emergency actions outlined in the biological assessment and the amendment. Thank you for your consideration of threatened and endangered species. For further information please contact Ms. Mary Richardson of this office. Please refer to the consultation number 2-21-92-I-478, in future correspondence concerning this project.

Sincerely,

A handwritten signature in cursive script, appearing to read "Sam F. Spiller".

Sam F. Spiller
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (GM:AZ)(AES)
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM (Attn: Sarah Rinkevich)

Director, Arizona Game and Fish Department, Phoenix, AZ

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